BRAIN RESEARCH

VOL. 734 NO. 1,2 **CONTENTS** **23 SEPTEMBER 1996**

Cited in Biological Abstracts (BIOSIS) – Chem. Abstracts – Index Medicus (MEDLINE) – Current Contents (Life Sci.) – Excerpta Medica (EMBASE) – Psychological Abstracts (PsycINFO) – Pascal et Francis (INIST-CNRS) – RIS (Reference Update) – Current Awareness in Biological Science (CABS)

Publisher's Note v

Guidelines for the submission of manuscripts vii

Research reports

Pharmacological characterization of apoptotic cell death in a model of photothrombotic brain injury in rats
A. Kharlamov, T. Uz, J.-Y. Joo and H. Manev (USA) 1

The role of apoptosis in sexual differentiation of the rat sexually dimorphic nucleus of the preoptic area
E.C. Davis, P. Popper and R.A. Gorski (USA) 10

Effects of the benzodiazepine inverse agonist RO19-4603 alone and in combination with the benzodiazepine receptor antagonists flumazenil, ZK 93426 and CGS 8216, on ethanol intake in alcohol-preferring (P) rats
H.L. June, T.L. Greene, J.M. Murphy, M.L. Hite, J.A. Williams, C.R. Cason, J. Mellor-Burke, R. Cox, S.E. Duemler, L. Torres, L. Lumeng and T.-K. Li (USA) 19

Haloperidol and MK-801 block increases in striatal calmodulin resulting from repeated amphetamine treatment
M.E. Gnegy, G.H.K. Hewlett and G. Pimputkar (USA) 35

Effects of reversible inactivation of the medial septal area on long-term potentiation and recurrent inhibition of hippocampal population spikes in rats
A. Rashidy-Pour, F. Motamedi, S. Semnanian, M.R. Zarrindast, Y. Fatollahi and G. Behzadi (Iran) 43

Simultaneous blockade of intracellular calcium increases and of neuronal epileptiform depolarizations by verapamil
M. Wiemann, D. Jones, H. Straub, U. Altrup and E.-J. Speckmann (Germany) 49

Central antagonism of atrial natriuretic peptides on behavioral and hormonal responses to angiotensin II: mapping with c-*fos*
B. Zhu and J. Herbert (UK) 55

Ethanol effects on synaptic neurotransmission and tetanus-induced synaptic plasticity in hippocampal slices of chronic in vivo lead-exposed adult rats
C.A. Grover and G.D. Frye (USA) 61

Modulation of glycine-induced chloride current in acutely dissociated rat periaqueductal gray neurons by μ-opioid agonist, DAGO
B.I. Min, C.J. Kim, J.S. Rhee and N. Akaike (South Korea, Japan) 72

Seasonal plasticity in the song nuclei of wild rufous-sided towhees
G.T. Smith (USA) 79

Brain nitrite production during global ischemia and reperfusion: an in vivo microdialysis study
M. Shibata, N. Araki, J. Hamada, T. Sasaki, K. Shimazu and Y. Fukuuchi (Japan) 86

Lack of development of tolerance to anticonvulsant effects of two excitatory amino acid antagonists, CFP 37849 and CGP 39551 in genetically epilepsy-prone rats
G. De Sarro, A. De Sarro, D. Ammendola and S. Patel (Italy, UK) 91

The effect of methamphetamine on histamine level and histidine decarboxylase activity in the rat brain
C. Ito, K. Onodera, E. Sakurai, M. Sato and T. Watanabe (Japan) 98

Localization and activation of substance P receptors in unmyelinated axons of rat glabrous skin
S.M. Carlton, S. Zhou and R.E. Coggeshall (USA) 103

Decreased gene expression of neuronal nitric oxide synthase in hypothalamus and brainstem of rats in heart failure
K.P. Patel, K. Zhang, I.H. Zucker and T.L. Krukoff (USA, Canada) 109

Hypothalamic cholinergic activity associated with 2-deoxyglucose-induced hyperglycemia
A. Takahashi, H. Ishimaru, Y. Ikarashi, E. Kishi and Y. Maruyama (Japan) 116

Chronic morphine decreases calbindin D_{28k} immunoreactivity in a subset of cerebellar Purkinje neurons of rat brain
M.M. Garcia, J. Gilster and R.E. Harlan (USA) 123

Distribution of somatostatin receptors in the adult human brainstem
V. Carpentier, H. Vaudry, A. Laquerrière, J. Tayot and P. Leroux (France) 135

Role of endothelin-1 in cerebral hematoma-induced modification of cerebral vascular reactivity in piglets
M.A. Yakubu and C.W. Leffler (USA) 149

Ensemble coding of muscle stretches in afferent populations containing different types of muscle afferents
M. Bergenheim, H. Johansson, J. Pedersen, F. Öhberg and P. Sjölander (Sweden) 157

Extracellular matrix molecules influence innervation density in rat cerebral blood vessels
I. Gavazzi, K.S. Boyle and T. Cowen (UK) 167

(contents continued on p. 358)

0006-8993(19960923)734:1/2;1-L

BRAIN RESEARCH

VOL. 734 NO. 1,2 **CONTENTS** **23 SEPTEMBER 1996**

Cited in Biological Abstracts (BIOSIS) – Chem. Abstracts – Index Medicus (MEDLINE) – Current Contents (Life Sci.) – Excerpta Medica (EMBASE) – Psychological Abstracts (PsycINFO) – Pascal et Francis (INIST-CNRS) – RIS (Reference Update) – Current Awareness in Biological Science (CABS)

Publisher's Note v

Guidelines for the submission of manuscripts vii

Research reports

Pharmacological characterization of apoptotic cell death in a model of photothrombotic brain injury in rats
A. Kharlamov, T. Uz, J.-Y. Joo and H. Manev (USA) 1

The role of apoptosis in sexual differentiation of the rat sexually dimorphic nucleus of the preoptic area
E.C. Davis, P. Popper and R.A. Gorski (USA) 10

Effects of the benzodiazepine inverse agonist RO19-4603 alone and in combination with the benzodiazepine receptor antagonists flumazenil, ZK 93426 and CGS 8216, on ethanol intake in alcohol-preferring (P) rats
H.L. June, T.L. Greene, J.M. Murphy, M.L. Hite, J.A. Williams, C.R. Cason, J. Mellor-Burke, R. Cox, S.E. Duemler, L. Torres, L. Lumeng and T.-K. Li (USA) 19

Haloperidol and MK-801 block increases in striatal calmodulin resulting from repeated amphetamine treatment
M.E. Gnegy, G.H.K. Hewlett and G. Pimputkar (USA) 35

Effects of reversible inactivation of the medial septal area on long-term potentiation and recurrent inhibition of hippocampal population spikes in rats
A. Rashidy-Pour, F. Motamedi, S. Semnanian, M.R. Zarrindast, Y. Fatollahi and G. Behzadi (Iran) 43

Simultaneous blockade of intracellular calcium increases and of neuronal epileptiform depolarizations by verapamil
M. Wiemann, D. Jones, H. Straub, U. Altrup and E.-J. Speckmann (Germany) 49

Central antagonism of atrial natriuretic peptides on behavioral and hormonal responses to angiotensin II: mapping with c-*fos*
B. Zhu and J. Herbert (UK) 55

Ethanol effects on synaptic neurotransmission and tetanus-induced synaptic plasticity in hippocampal slices of chronic in vivo lead-exposed adult rats
C.A. Grover and G.D. Frye (USA) 61

Modulation of glycine-induced chloride current in acutely dissociated rat periaqueductal gray neurons by μ-opioid agonist, DAGO
B.I. Min, C.J. Kim, J.S. Rhee and N. Akaike (South Korea, Japan) 72

Seasonal plasticity in the song nuclei of wild rufous-sided towhees
G.T. Smith (USA) 79

Brain nitrite production during global ischemia and reperfusion: an in vivo microdialysis study
M. Shibata, N. Araki, J. Hamada, T. Sasaki, K. Shimazu and Y. Fukuuchi (Japan) 86

Lack of development of tolerance to anticonvulsant effects of two excitatory amino acid antagonists, CFP 37849 and CGP 39551 in genetically epilepsy-prone rats
G. De Sarro, A. De Sarro, D. Ammendola and S. Patel (Italy, UK) 91

The effect of methamphetamine on histamine level and histidine decarboxylase activity in the rat brain
C. Ito, K. Onodera, E. Sakurai, M. Sato and T. Watanabe (Japan) 98

Localization and activation of substance P receptors in unmyelinated axons of rat glabrous skin
S.M. Carlton, S. Zhou and R.E. Coggeshall (USA) 103

Decreased gene expression of neuronal nitric oxide synthase in hypothalamus and brainstem of rats in heart failure
K.P. Patel, K. Zhang, I.H. Zucker and T.L. Krukoff (USA, Canada) 109

Hypothalamic cholinergic activity associated with 2-deoxyglucose-induced hyperglycemia
A. Takahashi, H. Ishimaru, Y. Ikarashi, E. Kishi and Y. Maruyama (Japan) 116

Chronic morphine decreases calbindin D_{28k} immunoreactivity in a subset of cerebellar Purkinje neurons of rat brain
M.M. Garcia, J. Gilster and R.E. Harlan (USA) 123

Distribution of somatostatin receptors in the adult human brainstem
V. Carpentier, H. Vaudry, A. Laquerrière, J. Tayot and P. Leroux (France) 135

Role of endothelin-1 in cerebral hematoma-induced modification of cerebral vascular reactivity in piglets
M.A. Yakubu and C.W. Leffler (USA) 149

Ensemble coding of muscle stretches in afferent populations containing different types of muscle afferents
M. Bergenheim, H. Johansson, J. Pedersen, F. Öhberg and P. Sjölander (Sweden) 157

Extracellular matrix molecules influence innervation density in rat cerebral blood vessels
I. Gavazzi, K.S. Boyle and T. Cowen (UK) 167

(contents continued on p. 358)

0006-8993(19960923)734:1/2;1-L

(contents continued)

Central actions of corticotropin releasing factor on sensori-autonomic processing in normotensive and hypertensive rats
K. Youngblood, L. Conti and M.P. Printz (USA) 175
Galanin-containing nerve terminals that are involved in a dual innervation of the striated muscles of the rat esophagus
H. Kuramoto, Y. Kato, H. Sakamoto and Y. Endo (Japan) 186
Plasma membrane calcium ATPase in synaptic terminals of chick Edinger-Westphal neurons
J.T. Fujii, F.T. Su, D.J. Woodbury, M. Kurpakus, X.-J. Hu and R. Pourcho (USA) 193
Progressive expression of immunomolecules on activated microglia and invading leukocytes following focal cerebral ischemia in the rat
H. Kato, K. Kogure, X.-H. Liu, T. Araki and Y. Itoyama (Japan) 203
Neural parameters contributing to temperature compensation in the flight CPG of the locust, *Locusta migratoria*
H. Xu and R.M. Robertson (Canada) 213
Persistent depression of synaptic responses occurs in quisqualate sensitized hippocampal slices after exposure to L-aspartate-β-hydroxamate
R.J. Roon and J.F. Koerner (USA) 223
Activation of human mesial cortex during somatosensory target detection task
N. Forss, I. Merlet, S. Vanni, M. Hämäläinen, F. Mauguière and R. Hari (Finland, France) 229
Evidence against oppositional and pharmacokinetic mechanisms of tolerance to diazepam's sedative effects
C. Fernandes, S.E. File and D. Berry (UK) 236
P_2 Purinoceptor-mediated inhibition of cyclic AMP accumulation in NG108-15 cells
S.-L. Song and S.-H. Chueh (Taiwan, ROC) 243
Neuromagnetic study of movement-related changes in rhythmic brain activity
B. Feige, R. Kristeva-Feige, S. Rossi, V. Pizzella and P.-M. Rossini (Germany, Italy) 252
Adenosine transport inhibition ameliorates postischemic hypoperfusion in pigs
J.M. Gidday, Y.-B. Kim, A.R. Shah, E.R. Gonzales and T.S. Park (USA) 261
Interferon modulates neuronal activity recorded from the hypothalamus, thalamus, hippocampus, amygdala and the somatosensory cortex
N. Dafny, B. Prieto-Gomez, W.-Q. Dong and C. Reyes-Vazquez (USA, Mexico) 269
Sex differences in paradoxical sleep: influences of estrus cycle and ovariectomy
J. Fang and W. Fishbein (USA) 275
Effect of early exposure to ethanol on the protein and DNA contents of specific brain regions in the rat
M.W. Miller (USA) 286
Isoflurane enhances glutamatergic agonist-stimulated nitric oxide synthesis in cultured neurons
A.L. Loeb, J.M. Gonzales and P.S. Reichard (USA) 295
Changes in apical organization of choroidal cells in rats adapted to spaceflight or head-down tilt
J. Gabrion, D. Maurel, B. Clavel, J. Davet, J. Fareh, S. Herbuté, K. O'Mara, C. Gharib, W. Hinds, I. Krasnov and A. Guell (France, USA, Russia) 301

Short communications

Histaminergic neurons facilitate social memory in rats
H. Prast, A. Argyriou and A. Philippu (Austria) 316
Distinct cellular compartment of cyclin-dependent kinase 5 (Cdk5) and neuron-specific Cdk5 activator protein ($p35^{nck5a}$) in the developing rat cerebellum
M. Matsushita, K. Tomizawa, Y.-F. Lu, A. Moriwaki, M. Tokuda, T. Itano, J.H. Wang, O. Hatase and H. Matsui (Japan, Hong Kong) 319
Expression of m_1 and m_4 muscarinic receptor mRNA in the striatum following a selective lesion of striatonigral neurons
M.B. Harrison, M. Tissot and R.G. Wiley (USA) 323
Immunocytochemical localisation of NK3 receptors in the dorsal vagal complex of rat
C. Carpentier and A. Baude (France) 327
Injection with gold thioglucose impairs sensitivity to glucose: evidence that glucose-responsive neurons are important for long-term regulation of body weight
H.T. Bergen, N. Monkman and C.V. Mobbs (Canada, USA) 332
Peripherin fibers in the main olfactory bulb are different from olfactory fibers and from LHRH fibers: an immunocytochemical and DiI study
M. Santacana, A.G. De la Vega and M. Heredia (Spain) 337
Biceps femoris tendon jerk reflexes are enhanced at the end of the swing phase in humans
H.W.A.A. Van de Crommert, M. Faist, W. Berger and J. Duysens (The Netherlands, Germany) 341
Improved method for producing neuronal hybrids using emetine and actinomycin D
N. Hikawa and T. Takenaka (Japan) 345
Reduction of NaCl increases survival of mammalian spinal neurons subjected to dendrite transection injury
L.J. Rosenberg and J.H. Lucas (USA) 349

Author Index 354